



Office of Energy Efficiency
and Renewable Energy

Advanced Vehicle Competitions

Background

The U.S. Department of Energy (DOE) advanced vehicle competitions offer hundreds of students each year an unparalleled experience in automotive engineering. Students not only learn theoretical and hands-on engineering, but they also learn skills in public speaking, technical writing, management, business, problem-solving, team building, and leadership. The vehicles built by university engineering students are an excellent way to demonstrate the technologies supported by DOE in real-world, on-road vehicles.

The FutureCar Challenge, which is co-sponsored by the U.S. auto industry, requires student teams to achieve goals that are similar to those of the Partnership for a New Generation of Vehicles: to design and build a mid-size sedan that can achieve 80 miles per gallon without sacrificing the safety, performance, or emissions of conventional vehicles. In the Ethanol Vehicle Challenge, which is co-sponsored by General Motors Corporation, students demonstrate that E-85 vehicles can compete successfully with gasoline-powered vehicles in every way (but fuel cost).

Accomplishments

- ◆ At the 1998 FutureCar Challenge, both the University of Wisconsin and Virginia Tech achieved 75 mpg (miles per gallon-equivalent) during the on-road fuel economy event.
- ◆ At the 1998 Ethanol Challenge, most vehicles not only achieved Tier 1 emissions, but they also demonstrated similar cold-start performance and better acceleration than the gasoline control vehicle. Challenge vehicles had better fuel economy, on an energy basis, than gasoline counterparts, both on the dynamometer and on the road.
- ◆ For every dollar spent by DOE, other sponsors contribute four dollars.
- ◆ In 1998, 65% of the students graduating from the Ethanol Challenge and 35% of the students graduating from the FutureCar Challenge joined the auto industry.



1998 FutureCar Winners:
University of Wisconsin and Virginia Tech

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Benefits

- ◆ DOE competition vehicles continually demonstrate, well before market readiness, technologies that are possible and viable.
- ◆ DOE's advanced vehicle competitions build more than vehicles – they “build” topflight automotive engineers for the U.S. auto industry.

Future Activities

- ◆ Change competition vehicle platforms to reflect changing consumer trends and the potential for increased energy efficiency. Sport utility vehicles will be considered for FutureCar 2000.
- ◆ Expand competition sponsorship to include automotive suppliers.

Partners in Success (1998 Sponsors)

Ford Motor Company
General Motors Corporation
DaimlerChrysler Corporation
National Science Foundation
Environmental Protection Agency
Natural Resources Canada
Aluminum Association
Illinois Department of Commerce and
Community Affairs
Renewable Fuels Association
Council of Great Lakes Governors
Governors' Ethanol Coalition
Illinois Corn Marketing Board
Williams Energy Services Group
National Corn Growers Association
GM Powertrain
and others

Contact

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